IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: P. H. Nguyen; Art Unit: 3724; Docket No.: 3208

In RE: **U.S. National Stage Application of T. John, et al**
Based on PCT/EP 2003/008417

Ser. No.: **10/523,850**

Filed: **February 7, 2005**

Title: **METHOD FOR CUTTING A CONTINUOUS GLASS SHEET DURING THE PRODUCTION OF FLAT GLASS**

November 10, 2009

APPEAL BRIEF

Hon. Commissioner of Patents
and Trademarks,
Washington, D.C. 20231

Sir:

In response to the final Office Action mailed May 14, 2009 and the advisory action mailed August 6, 2009, please consider the following arguments for overturning the anticipation rejections of the pending claims of the above-identified U.S. Patent Application:

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I. REAL PARTY IN INTEREST

The real party in interest is SCHOTT AG, which owns 100 % of the above-identified U.S. Patent Application.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals and interferences.

III. STATUS OF THE CLAIMS

1. Claims 1 to 28 were canceled; claims 29 to 35 are currently pending.

2. Method claims 29 to 33 stand rejected as anticipated under 35 U.S.C. 102 (b) by US Patent 3,880,028, issued to Fredrick, Jr.

3. Method claims 34 to 35 stand rejected as anticipated under 35 U.S.C. 102 (b) by US Patent 3,880,028, issued to Fredrick, Jr.

IV. STATUS OF AMENDMENTS

1. A request for reconsideration consisting of arguments only was filed on July 20, 2009.

2. The advisory action mailed August 6, 2009 stated that the argumentation in the request for reconsideration had been considered but did not put the application in a condition for allowance.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The page and line numbers in parentheses in the following summary of the claimed subject matter refer to the location of that subject matter in the appellants' original specification filed February 7, 2005.

A. Independent Method Claim 29

Claim 29 covers a method of cutting a continuously moving glass sheet with a cutting tool that encounters different glass sheet thicknesses in different regions of the glass sheet as it travels across the glass sheet from one side to the other. The cutter head 4 is shown traveling across the glass sheet from one side of the glass sheet to the other in figs. 1 & 2a (page 7, lines 12 to 21, of appellants' originally filed specification). Flat glass continuously produced in the float process is usually thicker in border regions of the flat glass sheet than in the center region (the so-called net glass) (page 7, lines 23 to 30, of appellants' originally filed specification; fig. 2c). These thickness variations for continuously produced glass sheets are well-known in the art. In the case of a net glass of a thickness of about 2 mm the border regions can have a thickness of about 3.5 mm.

The claimed steps of independent method claim 29 provide an improved method that achieves the object of the invention, which is to apply a variable

cutting force during formation of the fissure or score line in the glass sheet as the cutting tool moves across the glass sheet that is adjusted so that the fissure is sufficient for later mechanical breaking along the fissure or score line, while preventing the premature breaking during cutting to form the fissure (Page 3, lines 16 to 20, of the appellants' specification). If a constant force is applied by the cutting tool as the cutting tool moves from one side of the glass sheet to the other, it would be too great in the net region causing premature breakage if it is sufficiently great to form a satisfactory fissure or score line in the border regions.

According to claim 29 the method of the invention includes moving a cutting tool at an angle to the sheet travel direction across the glass sheet to produce a fissure in the glass sheet (page 3, lines 23 to 26, of appellants' specification) as stated in steps a to c of claim 29. The cutting force used to form the fissure is adapted to the thickness of the glass sheet, in other words the cutting force of the cutting tool is varied according to the thickness as the cutting tool moves across the glass sheet forming the fissure (page 4, lines 1 to 4, of the appellants' specification as required by step e of claim 29). Thus as the cutting tool crosses the glass sheet from one side to the other during formation of the fissure a greater force is applied in the thicker border regions of the glass sheet than in the net region as stated in step e of claim 29 (page 4, lines 10 to 13, and page 4, lines 19 to 22, of appellants' specification).

After the fissure across the glass sheet is completed the glass sheet is mechanically broken along the fissure as claimed in step f of claim 29 (Page 3, line 27, of appellants' specification).

The glass thickness as a function of position across the glass sheet or in the border regions and then in the net region can be measured as required by step d of claim 29, either in an initial measurement prior to the cutting of the fissure or can be continuously measured at the cutting tool as the cutting tool moves across the glass sheet forming the fissure (page 8, lines 21 to 28, of appellants' specification). These are the two main types of embodiments of the appellants' method covered by the generic claim 29.

The appellants' specification provides support for the wording "different regions of the glass sheet with different glass sheet thicknesses" in steps b to e of claim 29 in the paragraph between lines 23 and 30, of page 7.

The appellants' specification provides support for a positive electrical control of the cutting force applied by the cutting tool with a controller at page 4, line 28, to page 5, lines 1 to 5. Page 5, line 30, and page 3, lines 17 to 20, of the appellants' specification support the step of controlling the cutting forces applied by the cutting tool so that they are sufficient to form the fissure but not so large that they cause uncontrolled breaking during fissure formation. The step of controlling is further supported in appellants' specification by the disclosures of a a controller with sensors for performing the controlling, which include a position sensor 11 by which the controller knows the lateral position of the cutting wheel as it travels across the glass sheet, which is disclosed on page 9 of appellants' specification and shown in fig. 3.

B. Dependent Method Claims 30 and 31

Claims 30 and 31 cover the embodiments of the method of claim 29 in which the position of the cutting tool is continuously measured as the cutting tool crosses the glass sheet from one side to the other and the cutting force is increased or decreased when the cutting tool moves into a thicker or thinner region respectively as determined according to the measured position. These dependent claims are supported by the description of the operation of the controller on page 9, lines 5 to 12, in connection with the disclosure on page 8, lines 21 to 24, of appellants' specification. Page 9, lines 5 to 12, states that the position sensor 11 is used by the controller (fig. 3) to determine when the predetermined switchover points e.g. at the boundaries between the border and net regions are reached so that the cutting force can be increased or decreased in accordance with the explanation on page 8, especially lines 21 to 24, of the appellants' specification.

This embodiment is especially useful for manufacturing a glass sheet of the same nominal thickness in a float glass process in which there are the aforesaid thickness variations but the thickness distribution remains basically the same over a substantial period of time. Then the switchover points do not change substantially with time.

C. Independent Method Claim 34

Claim 34 <u>also</u> covers a method of cutting a continuously moving glass sheet with a cutting tool that encounters different glass sheet thicknesses in different regions of the glass sheet as it travels across the glass sheet from one side to the other. The cutter head 4 is shown traveling across the glass sheet from one side of the glass sheet to the other in figs. 1 & 2a (page 7, lines 12 to 21, of appellants' originally filed specification). Flat glass continuously produced in the float process is thicker in border regions of the flat glass sheet than in the center region (the so-called net glass) (page 7, lines 23 to 30, of appellants' originally filed specification; fig. 2c). These thickness variations for continuously produced glass sheets are known in the art. In the case of a net glass of a thickness of about 2 mm the border regions can have a thickness of about 3.5 mm.

The claimed steps of independent method claim 34 provide an improved method that achieves the object of the invention, which is to apply a variable cutting force during formation of the fissure or score line in the glass sheet as the cutting tool moves across the glass sheet that is adjusted so that the fissure is sufficient for later mechanical breaking along the fissure or score line, while preventing the premature breaking during cutting to form the fissure (Page 3, lines 16 to 20, of the appellants' specification). If a constant force is applied by the cutting tool as the cutting tool moves from one side of the glass sheet to the other, it would be too great in the net region causing premature breakage if it is

sufficiently great to form a satisfactory fissure or score line in the border regions.

According to claim 34 the method of the invention includes moving a cutting tool at an angle to the sheet travel direction across the glass sheet to produce a fissure in the glass sheet (page 3, lines 22 to 26, of appellants' specification) as stated in steps a and b of claim 34. It is self-evident that the cutting tool would traverse a plurality of positions on the glass sheet. The fact that the cutting force is actively varied as the cutting tool forms the fissure is supported by page 4, lines 8 to 10, of the appellants' specification. The step e of mechanically breaking of claim 34 is supported by page 3, lines 26 to 27, of appellants' specification.

Page 6, lines 4 to 6 and page 8, lines 26 to 28, of appellants' specification support step c of claim 34, which states that during the moving of the cutting tool across the glass sheet and thus during the forming of the fissure glass sheet thickness values are continuously measured.

The final step f of claim 34 of automatically controlling the variable cutting forces so that the fissure formation is sufficient for the breaking but never so great that premature breaking occurs during fissure formation is fully supported by page 3, lines 16 to 29, which state the object of the invention in one paragraph and then state that it is attained by the steps of the second paragraph.

The method of claim 34 primarily differs from that of claim 29 because according to claim 34 the cutting force forming the fissure is adjusted <u>at the same time</u> that the thickness of the glass sheet is measured (page 6, lines 4 to 6, of the appellants' specification).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

(1) Whether claims 29 to 33 are anticipated under 35 U.S.C. 102 (b) by US Patent 3,880,028, issued to Fredrick, Jr.

(2) Whether claims 34 to 35 are anticipated under 35 U.S.C. 102 (b) by US Patent 3,880,028, issued to Fredrick, Jr.

VII. ARGUMENTATION

Arguments to show that the above-stated rejections of the pending claims as anticipated by US Patent 3,880,028, issued to Fredrick, Jr., (called "Fredrick" in the following argumentation) under 35 U.S.C. 102 (b) should be overturned are presented in this section.

A. Method Claims 29, 32, and 33

In this subsection arguments for overturning the rejection of claims 29, 32, and 33 as anticipated by Fredrick are presented. These arguments rely solely on distinguishing features and limitations in claim 29. The rejection of the subject matter of dependent claims 30 and 31 as anticipated by Fredrick is handled separately in the next subsection, which presents additional arguments to show that the anticipation rejections of these dependent claims should be overturned.

In contrast to the statements on page 2 of the final Office Action appellants respectfully submit that step e of claim 29, which states that the cutting force applied with the cutting tool to the moving glass sheet is adjusted so that it increases when the thickness increases and so that it decreases when the cutting force decreases, is not disclosed or suggested in Fredrick.

According to the most general teaching in the "Summary of Invention" in

column 1, lines 58 to 67, the method of Fredrick comprises measuring the sound energy generated during mechanical scoring of the glass. Then the cutting force of scoring pressure is varied (controlled) in accordance with the measured sound energy, either manually or under automatic control.

A disclosure of a generic method does not anticipate a specific method under 35 USC 102, unless the species of the generic method can be "immediately envisaged". See for example M.P.E.P. 2131.02 and also 2144.08 in re obviousness.

Throughout the remaining disclosure in Fredrick several species of their generic method of cutting a moving glass sheet described in column 1 are disclosed which are characterized by definite functional relationships of the applied cutting force to the sound intensity measured by their pickup devices 30, 40 or to a glass sheet or process variable that controls the sound intensity produced during scoring.

According to column 1, last line, to column 2, first line, of Fredrick the cutting pressure should be adjusted during a cross-cutting event to maintain a predetermined constant sound level to provide "cuts of uniform quality".

Regarding the thickness of the glass sheet, there is only a single mention of thickness of the glass sheet as a parameter that affects sound intensity in Fredrick at column 5, lines 5 to 15. However Fredrick does not disclose the functional relationship between the measured sound signal intensity and the glass sheet thickness. Fredrick does **not** state that the sound signal intensity should increase with increasing glass sheet thickness. It is more likely that

Fredrick means to state that the sound signal depends on the depth of the score (i.e. thickness of the glass penetrated by the cutting tool) rather than the thickness of the glass sheet from one side to the other because the forces on the cutting tool logically would be more dependent on the depth of the score than the thickness of the glass sheet from one side to the other.

Furthermore assuming for sake of argument that Fredrick disclosed that the sound signal increases in direct proportion to the thickness of the glass sheet (which it absolutely does not), Fredrick does **not** teach one skilled in the art how the cutting force should be varied if the sound signal <u>increases</u> because the thickness of the glass sheet <u>increases</u>. According to appellants' claimed and disclosed method of claim 29 the cutting force should be increased when the thickness of the glass sheet increases. However according to column 1, last line, and column 2, first line, Fredrick teaches that the sound level during cross-cutting should be kept <u>constant</u> in order to make "cuts of uniform quality". Because of that according to Fredrick if the sound intensity were to increase one would <u>decrease</u> the cutting force or pressure, not increase it, because column 4, lines 31 to 33, of Fredrick teach that "higher pressures on the scoring tool are found to produce higher sound level readings".

In other words, the supposed dependence of the sound intensity on glass sheet thickness according to column 5 would result in the opposite of step e of claim 29, namely the cutting force would be decreased when the glass sheet thickness increases to maintain a constant sound intensity at the pickups, if one assumes that the disclosure in column 5 teaches that the sound level increases

with increasing glass sheet thickness.

In fact, Fredrick provides one skilled in the art with no guidance regarding the functional relationship between the thickness variations in different regions of the glass sheet during cross-cutting (when by "thickness" is meant the distance from one side of the glass sheet to the other). More importantly, Fredrick does not disclose the manner in which the cutting force should be varied as a function of thickness changes from one region of the glass sheet to another of a different thickness when the sound signal depends only on thickness changes between the different regions. As noted in the above paragraph, if the teachings of their generic method regarding maintaining a constant sound intensity are applied to a situation in which the sound signal depends only on glass sheet thickness <u>then Fredrick teaches the opposite from step e of claim 29</u>.

Furthermore Fredrick does **not** use the term "thickness" in any of their method claims 8 to 17. The method claims of Fredrick do <u>not</u> claim a method in which the cutting force is increased when the thickness of the glass sheet increases as in step e of claim 29. His method claims merely state that the scoring pressure is <u>controlled</u> according to the detected sound intensity (claim 8) or the scoring speed is <u>controlled</u> according to the detected sound intensity (claim 13).

It is respectfully submitted that <u>the burden of proof</u> is on the US Patent Office to show that <u>each and every limitation</u> of the method claimed in claim 29 is disclosed in Fredrick for a valid anticipation rejection under 35 U.S.C. 102 (b). For example, M.P.E.P. 2131 states that it must be shown that each and every

limitation of the claimed method must disclosed in a single prior art reference for a valid anticipation rejection. Also the Federal Circuit Court of Appeals has said:

> **" 'For a prior art reference to anticipate in terms of 35 U.S.C. 102, every element of the claimed invention must be identically shown in a single reference' .. These elements must be arranged as in the claim under review, but this is not an 'ipsissimis verbis' test."** ***In re Bond*, 15 U.S.P.Q. 2nd 1566 (Fed Cir 1990).**

As can be seen from the above analysis the explanations in the final Office Action and the Advisory action have not pointed out the location of <u>each and every</u> limitation in step e of claim 29. Fredrick does not disclose the manner in which the sound level or intensity varies with glass sheet thickness and especially does not disclose that the cutting force should be increased when the glass sheet thickness increases.

Regarding the above argument that step e of claim 29 is <u>not</u> disclosed in Fredrick the advisory action states that:

> **"when the cutting tool is moving across the glass sheet, different cutting forces are applied on the glass sheet depending on its thickness (column 2, lines 35 to 39). ...The cutting tool is provided with a biasing means. When the cutting tool enters a region of the glass sheet having a thicker thickness, the biasing means is compressed by the thickness of the glass sheet and thus applies a greater cutting force. When the cutting tool enters a region of the glass sheet having a thinner thickness, the biasing means is not compressed by the thickness of the glass sheet and thus applies a lesser cutting force."**

However this rebuttal argument in the advisory action assumes that the biasing means is compressible, but Fredrick never discloses the structure of any mechanical biasing means or that the biasing means is compressible. On the

contrary, Fredrick, discloses in column 2, lines 35 to 38, that:

> **"the biasing means are adjustable so as to vary the pressure exerted by the scoring wheel on the glass. Means to carry out the adjustment by remote control may advantageously be included."**

Thus in automatic operation the biasing means does not act by itself to vary the cutting force or pressure but instead is **under "remote control".** Alternatively the biasing is **under operator manual control.** Columns 1 and 2 clearly state that the cutting force is **controlled** according to the sound intensity, which is the only factor that determines the cutting force.

Column 1, lines 58 to 67, teaches that the sound energy level detected by the pickups or the detector is measured and that **the cutting pressure is adjusted according to the sound energy level. Thus the disclosed and claimed method of Fredrick, requires that biasing means, whether mechanical, electromotive or pneumatic, is under positive control of a controller or of an operator so that the applied cutting force is varied according to the measured sound intensity level, not the thickness of the glass sheet**.

In addition, the figures of Fredrick do not show a compressible biasing means, such as a coil spring, but only show a cutter head assembly 15 and a carriage 14.

Furthermore Bier teaches that one must use an electrically controlled motor to vary cutting depth of the score line during cross-cutting, because compressible means are too slow to respond to the required changes (column 2, lines 5 to 10, of Bier). Thus Bier is evidence that one skilled in the art would not

use compressible biasing means comprising a spring or the like if one were to vary the cutting force applied by the cutting tool during cross-cutting.

Thus it should be apparent that the rebuttal argument regarding step e of claim 29 in the advisory action is not well founded and Fredrick does not teach all the limitations of step e of claim 29.

The same is true of the rebuttal argument in the Advisory Action regarding step f. Fredrick does not teach that the biasing means is compressible, which is required by the argumentation in the advisory action, and actually teaches that a positive control is applied to vary the cutting force according to the measured sound level. Thus if the sound level changes but the thickness does not, the cutting force will still be changed.

Furthermore since thickness is only a secondary factor affecting the sound level, it is unlikely that variations in thickness, in contrast to scoring depth, would significantly change the sound level. The advisory action calls for more proof regarding this fact from the appellants, but it is respectfully submitted that the burden of proof has not shifted to the appellants. The US Patent Office should make a *prima facie* showing that each and every limitation of the claimed invention is disclosed in Fredrick for a valid obviousness rejection. The advisory action essentially **admits** that the US Patent Office <u>cannot</u> <u>determine</u> that the sonic pickups 30, 40 of Fredrick can <u>measure</u> variations in the thickness of the glass sheet, so that it is clear that that is not disclosed in Fredrick.

The rebuttal arguments in the advisory action regarding step d allege that step d does not positively recite measuring the thickness as a function of location. On the contrary step d of claim 29 states that the inhomogeneous thickness distribution across the glass is measured "to determine different thicknesses in <u>said</u> different <u>regions</u>". Step b of claim 29 states that the different regions have different glass sheet thicknesses. Appellants' method is limited to glass sheets that are formed with different glass sheet thicknesses in different regions (i.e. locations) across the glass sheet. Thus the measuring step d measures or determines the different thicknesses at different locations (regions) of the glass sheet which are crossed when the cutting tool moves across the glass sheet.

Fredrick does not teach measuring any glass sheet thicknesses, average or otherwise and if the previous arguments of appellants have conveyed that impression they should be changed. The term "thickness" is only mentioned once in Fredrick and no discussion of measuring thickness is provided in Fredrick.

Fredrick does not teach step d of claim 29.

For the aforesaid reasons Honorable Board of Patent Appeals and Interferences is respectfully requested to overturn the rejection of claims 29, 32, and 33 as anticipated under 35 U.S.C. 102 (b) by US Patent 3,880,028, issued to Fredrick, Jr.

B. Dependent Method Claims 30 and 31

In this subsection argumentation is presented to show that the additional features and limitations present in dependent method claims 30 and 31 provide further reasons to overturn the anticipation rejection of dependent claims 30 and 31 based on the disclosures in US Patent 3,880,028, issued to Fredrick, Jr.

Of course the features and limitations of claim 29 are incorporated in the subject matter of claims 30 and 31 because of their dependence on claim 29 and thus the anticipation rejection of claims 30 and 31 should be overturned for the reasons in the above sub-section A.

In addition to the above-described limitations of claim 29 that are not disclosed by Fredrick, this prior art US Patent does **not** teach **either** detecting the position of the cutting tool during the cross-cutting <u>continuously</u> as claimed in appellants' claim 30 **or** detecting a position of the cutting tool in order to appropriately adapted cutting forces when position-dependent switchover points are reached according to appellants' claim 31.

The appellants' claims are <u>method</u> claims and therefore if one of appellants' method steps is not disclosed in the single prior art reference used to anticipate their claim, then their <u>method</u> is not anticipated by the single prior art reference.

Page 3 of the final Office Action alleges that the device 30 in figs. 1 to 2 is a position sensor. It is respectfully submitted that this allegation is incorrect.

First the device 30 is not shown in fig. 2. Second the device 30 in fig. 1 is a sound or ultrasound pickup device, i.e. a microphone, according to column 2, lines 53 to 59, of Fredrick.

There is no method step of measuring or detecting the position of the cutting wheel 16 as it moves across the glass sheet in the method disclosed in Fredrick. The method of Fredrick relies on detecting and measuring the sound or ultrasound that is produced by the formation of the fissure 19 with the cutting wheel 16 with the sonic or ultrasonic pickup 30. The pressure of the cutting wheel 16 on the glass sheet is varied according to the level or intensity of the sound or ultrasound picked up according to column 4, lines 28 to 55, so that the position of the cutting wheel does not need to be measured in the method of Fredrick.

Merely because an element of the apparatus that performs a method step disclosed in Fredrick could be used as part of a device to perform an undisclosed method step does not mean that Fredrick discloses the undisclosed method step. For example, the cutting wheel 16 of Fredrick could be used as part of a position measuring device (structured like a pedometer), but of course Fredrick does not do that because Fredrick has no motivation to measure the position of the cutting tool since the cutting force is adjusted in Fredrick in response to a sound or ultrasound signal of a pick up 30 traveling with the cutter wheel 16.

Claim terms should be interpreted as broadly as possible during examination, but not in such manner that they acquire a meaning that is not supported by the specification on which they are based. For example, see M.P.E.P. 2173.03. The specification of Fredrick provides no support for

interpreting the pick up 30 as part of a position measuring device and no support for a step of measuring the position of the cutting tool as it moves across the glass sheet to form the fissure.

Fig. 3 and appellants' disclosure on page 9 of the originally filed specification disclose an apparatus for performing appellants' method which comprises a control computer 8, a connected analog cutting force controlling device 8, 9, 10 receiving control signals from the computer controller and a position sensor 11 that detects the position of the cutting tool as it passes across the glass sheet during cross-cutting. The control computer issues control commands for the cutting force controlling device on the basis of the measured position data sent to it from the sensor 11. There is no such position sensor in the apparatus of Fredrick.

According to M.P.E.P. 2131 each and every element of a claimed invention must be disclosed in a single prior art reference for a valid anticipation rejection under 35 U.S.C. 102 (b) based on that prior art reference. For example, the Federal Circuit Court of Appeals has said:

> " 'For a prior art reference to anticipate in terms of 35 U.S.C. 102, every element of the claimed invention must be identically shown in a single reference' .. These elements must be arranged as in the claim under review, but this is not an 'ipsissimis verbis' test. ***In re Bond***, 15 U.S.P.Q. 2nd 1566 (Fed. Cir. 1990).

Since the position of the cutting tool is measured or detected in the methods claimed in claims 30 and 31 and such position measurements are not disclosed in Fredrick, the subject matter of claims 30 and 31 is **not** anticipated by

the disclosures of Fredrick.

Furthermore since there is no motivation for one skilled in the art to measure the position of the cutting tool or mount position sensors on the cutter wheel carriage of Fredrick, the method as claimed in claims 30 and 31 is **not** obvious from Fredrick.

For the aforesaid additional reasons Honorable Board of Patent Appeals and Interferences is respectfully requested to overturn the rejection of claims 30 and 31 as anticipated under 35 U.S.C. 102 (b) by US Patent 3,880,028, issued to Fredrick, Jr.

C. Method Claims 34 and 35

In this subsection, arguments for overturning the rejection of claims 34 and 35 as anticipated by Fredrick are presented.

Claim 34 is quite similar to claim 29. Steps a, b and d of claim 34 are substantially the same as steps a, b and c of claim 29, except that when claim 29 recites applying different cutting forces in different regions of different thicknesses during cross-cutting claim 34 recites applying variable cutting forces at different points of contact or positions across the glass sheet during cross-cutting. However there is no statement in claim 34 like that provided in step e of claim 29, which states that the cutting forces are increased when the glass sheet thickness increases and are decreased when the glass sheet thickness

decreases.

Claim 34 contains the somewhat broader step f, which is similar to step g of claims 29. Step f of claim 34 is as follows:

> **"automatically controlling said variable cutting forces applied by the cutting tool at said corresponding points of contact of the cutting tool with the moving glass sheet so that said variable cutting forces vary according to said respective glass sheet thickness values at said points of contact and are sufficient to form said fissure but not so large as to cause uncontrolled breaking of said glass sheet during formation of the fissure prior to the mechanically breaking".**

However appellants' specification teaches that in order to provide cutting forces of the aforesaid magnitude to avoid uncontrolled breaking but provide a sufficient score or cut or fissure depth, the cutting forces must be increased in regions or at positions where the glass is thicker and decreased in regions or at positions where the glass is thinner.

Thus the same argument for overturning the anticipation rejection of claim 29 based on step e of claim 29 applies to claim 34 because of the limitations in step f of claim 34.

Fredrick only discloses in column 5 that the sound intensity detected by their pickups depends on thickness among other variables. However Fredrick does not disclose specifically how the applied cutting force should be varied when the glass sheet thickness is increased or decreased. Assuming that column 5 teaches that the sound intensity increases with increasing thickness for the sake of argument (Fredrick is absolutely silent regarding this issue), then the teaching in column 2, line 1, of Fredrick would imply that the cutting force should be decreased when the glass sheet thickness increases, but this is entirely the

opposite from the method claimed in appellant's claim 34.

Thus the method of claim 34 is not disclosed in Fredrick.

The argumentation regarding the "biasing means" rebuttal arguments in the advisory action regarding step e of claim 29, which were presented in subsection A above, are also applicable to step f of claim 34. These arguments are not repeated here in subsection C for the sake of brevity.

The arguments regarding the step of measuring the thickness values across the glass sheet, as claimed in step d of claim 29, which were presented in subsection A above, are also applicable to the limitations in step c of claim 34. They are not repeated in detail in this subsection C. However step c of claim 34 is limited to performing the measurements at the same time as the cutting tool moves across the glass sheet during cross-cutting to produce the score or fissure.

Fredrick does not disclose a method in which the thickness of the glass sheet is measured at the same time as the cutting force for forming the fissure or score is adjusted as a function of the measured position as claimed in claim 34.

For the aforesaid reasons Honorable Board of Patent Appeals and Interferences is respectfully requested to overturn the rejection of claims 34 and 35 as anticipated under 35 U.S.C. 102 (b) by US Patent 3,880,028, issued to Fredrick, Jr.

VIII. APPENDIX OF CLAIMS

A clean copy of the pending claims on appeal follows herein below.

29. A method of cutting a continuously moving glass sheet during production of flat glass with an inhomogeneous thickness distribution across the glass sheet, said method comprising the steps of:

a) providing a moving glass sheet that is continuously moving in a travel direction;

b) moving a cutting tool across the moving glass sheet at an angle to the travel direction of the moving glass sheet so that the cutting tool traverses different regions of the glass sheet with different glass sheet thicknesses;

c) during the moving of the cutting tool across the moving glass sheet over said different regions of said glass sheet, applying different cutting forces to the moving glass sheet in said different regions of the glass sheet so that a fissure is formed in the glass sheet;

d) measuring said inhomogeneous thickness distribution across the glass sheet to determine said different thicknesses in said different regions; and

e) during the moving of the cutting tool across the moving glass sheet to form said fissure, adjusting the different cutting forces applied to said moving glass sheet in said different regions according to said different thicknesses of said glass sheet in said different regions determined during said measuring of

step d), so that said different cutting forces are increased when said different thicknesses increase and said different cutting forces are decreased when said different thicknesses decrease; and then

f) mechanically breaking the glass sheet along the fissure;

g) controlling said different cutting forces applied by said cutting tool in said different regions so that said different cutting forces are sufficient to form said fissure but not so large as to cause uncontrolled breaking of said glass sheet during formation of the fissure prior to the mechanically breaking.

30. The method as defined in claim 29, further comprising detecting a position of the cutting tool continuously with a position sensor during the moving of the cutting tool across the glass sheet and, depending on the position of the cutting tool, applying an appropriately adapted cutting force in one of said regions of the glass sheet having a constant thickness and applying another cutting force increased or decreased in relation to the appropriately adapted cutting force in another of said regions of said glass sheet having respectively greater or smaller thickness than in said one of said regions.

31. The method as defined in claim 29, further comprising applying appropriately adapted cutting forces to the glass sheet with the cutting tool according to position-dependent switchover points predetermined in a fixed manner in a controller for controlling the different cutting forces applied to the glass sheet, and wherein said controller is connected with a position sensor for detecting a

position of the cutting tool in order to determine when said cutting tool reaches said switchover points.

32. The method as defined in claim 29, further comprising providing a controller and applying said different cutting forces actively specified by said controller according to externally input control commands.

33. The method as defined in claim 29, further comprising determining said different cutting forces applied to said glass sheet in said different regions of said glass sheet with a controller in a fixed manner as a function of an initial measurement of said inhomogeneous thickness distribution across the glass sheet, so as to adapt said different cutting forces automatically to said different thicknesses in said different regions of the glass sheet.

34. A method of cutting a continuously moving glass sheet during production of flat glass with an inhomogeneous thickness distribution across the glass sheet, said method comprising the steps of:

a) providing a moving glass sheet that is continuously moving in a travel direction;

b) moving a cutting tool across the moving glass sheet at an angle to the travel direction of the moving glass sheet so that the cutting tool traverses a plurality of positions on the glass sheet;

c) during the moving of the cutting tool across the moving glass sheet, continuously measuring respective glass sheet thickness values of the moving glass sheet;

d) during the moving of the cutting tool across the moving glass sheet, applying variable cutting forces to the moving glass sheet at corresponding points of contact of the cutting tool with the glass sheet so that a fissure is formed in the glass sheet;

e) mechanically breaking the glass sheet along the fissure; and

f) automatically controlling said variable cutting forces applied by the cutting tool at said corresponding points of contact of the cutting tool with the moving glass sheet so that said variable cutting forces vary according to said respective glass sheet thickness values at said points of contact and are sufficient to form said fissure but not so large as to cause uncontrolled breaking of said glass sheet during formation of the fissure prior to the mechanically breaking.

35. The method as defined in claim 34, further comprising the step of providing a controller with means for adjusting the variable cutting forces at said corresponding points of contact of the cutting tool with the glass sheet, and wherein the controller automatically controls said variable cutting forces applied at said corresponding points of contact with the glass sheet so that said uncontrolled breaking of said glass sheet is prevented during the formation of the fissure and prior to the mechanically breaking.

IX. EVIDENCE APPENDIX

NONE

X. RELATED PROCEEDINGS

NONE

XI. SIGNATURE

In view of the foregoing, favorable allowance is respectfully solicited.

Respectfully submitted,

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